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Redescription of two West Himalayan *Cheiracanthium* (Aranei: Cheiracanthiidae)

Переописание двух видов рода *Cheiracanthium* (Aranei: Cheiracanthiidae) из Западных Гималаев

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KEY WORDS: Araneae, O. Pickard-Cambridge, Ferdinand Stoliczka, Pakistan, India, new synonym, lectotype designation.

КЛЮЧЕВЫЕ СЛОВА: Araneae, O. Pickard-Cambridge, Фердинанд Столичка, Пакистан, Индия, новый синоним, выделение лектотипа.

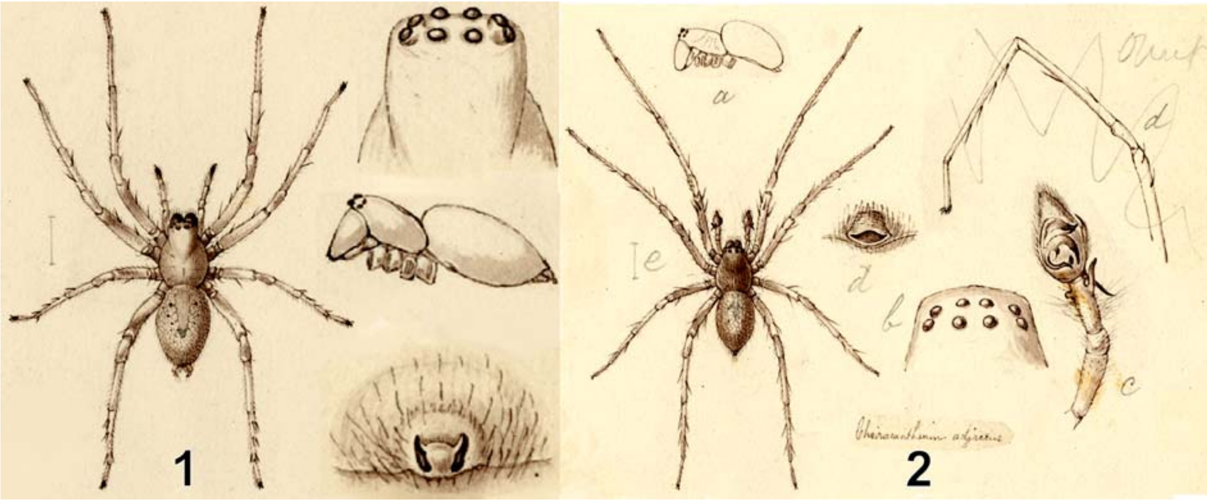
ABSTRACT: Two species of *Cheiracanthium*, known only from the original descriptions, *C. adjacens* O. Pickard-Cambridge, 1885 and *C. approximatum* O. Pickard-Cambridge, 1885, are redescribed based on their types. A lectotype is designated for *C. adjacens*. The type localities of the two species lie in Himalaya, not in Tibet (Yarkand, Xinjiang, China), as indicated in catalogs. The lectotype (designated here) of *C. insulanum* (Thorell, 1878) a species described from Ambon, Indonesia is illustrated for the first time. It was found that literature records and figures of *C. insulanum* refer to *C. approximatum*. Because of this, seven species considered as junior synonyms of *C. insulanum* are moved to synonyms of *C. approximatum*: *C. adjacensoides* Song, Chen et Hou, 1990, syn.n., *C. paradjacens* Chen et Gao, 1990, syn.n., *C. payateus* Barrion et Litsinger, 1995, syn.n., *C. tigbauaensis* Barrion et Litsinger, 1995, syn.n., *C. tingilium* Barrion et Litsinger, 1995, syn.n., *C. bikakapenalcolium* Barrion et Litsinger, 1995, syn.n. and *Cheiracanthium hugiscium* Barrion et Litsinger, 1995, syn.n.

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РЕЗЮМЕ. Переописаны два вида пауков рода *Cheiracanthium*, известные только по первоописанию, *C. adjacens* O. Pickard-Cambridge, 1885 и *C. approximatum* O. Pickard-Cambridge, 1885. Выделен лектотип для *C. adjacens*. Типовые местообитания находятся в Западных Гималаях, но не в Тибете (Синьцзян, Яркенд) как указывается в каталогах. Впервые переописан лектотип (выделен нами) *C. insulanum* (Thorell, 1878) вида, описанного с Амбона, Индонезия. Установлено, что все литературные указания *C. insulanum* относятся к *C. approximatum*. Вследствие этого, 7 видов считавшихся синонимами *C. insulanum* синонимизируются с *C. approximatum*: *C. adjacensoides* Song, Chen et Hou, 1990, syn.n., *C. paradjacens* Chen et Gao, 1990, syn.n., *C. payateus* Barrion et Litsinger, 1995, syn.n., *C. tigbauaensis* Barrion et Litsinger, 1995, syn.n., *C. tingilium* Barrion et Litsinger, 1995, syn.n., *C. bikakapenalcolium* Barrion et Litsinger, 1995, syn.n. and *Cheiracanthium hugiscium* Barrion et Litsinger, 1995, syn.n.

Introduction

O. Pickard-Cambridge [1885] described two new species of *Cheiracanthium* based on material collected by Ferdinand Stoliczka during the Second Yarkand Mission: *C. adjacens* and *C. approximatum*. The WSC [2020] currently records the localities of both species in southwestern Xinjiang as “China (Yarkand)”. Neither of them has been redescribed since then, though *C. adjacens* was reported by Caporiacco [1935] from the



Figs 1–2. Copy of original draft figures of *Cheiracanthium approximatum* (1) and *C. adjacens* (2) made by O. Pickard-Cambridge. Fig. 2'd' shows a leg that is not given on the published figure plate.

Рис. 1–2. Копии оригинальных рисунков *Cheiracanthium approximatum* (1) и *C. adjacens* (2). Рис. 2'd' содержит рисунок ноги, которого нет в публикации.

Jammu and Kashmir region of the Karakoram Mountains. The opportunity arose to study types of those species described by O. Pickard-Cambridge in 1885, and it was decided to redescribe them to allow further research of the genus in this region. Most of the species described in this work have for a long time remained unstudied because the vials belonging to the "Yarkand Mission" collection have no geographical or species labels [Marusik, Nadolny 2018; Marusik, Omelko 2018; Marusik, Zonstein 2019]. The only labels present state the bottle number, vial number, and sometimes, the number of specimens in the vial. Detailed work is required to identify the different species and no archival materials have been found to aid identification. Further difficulties resulted from the fact that in the species descriptions O. Pickard-Cambridge [1885] does not indicate how many specimens have been studied and therefore how large the type series are (numbers of syntypes).

Although descriptions of both *Cheiracanthium* species were supplied with figures we faced certain difficulties when trying to recognize species in amongst the Yarkand materials. In total we found four specimens, two males and two females, in three vials. One of the vials contained both a male and a female. The two males are identical to each other and closely resemble *C. insulanum* (Thorell, 1878) sensu Deeleman-Reinhold [2001]. The illustration [O. Pickard-Cambridge 1885: fig. 17c and Fig. 2] of the male palp of *C. adjacens* fits well to the specimens studied and it was at first assumed that *C. adjacens* would be synonymized with *C. insulanum*. At the same time however, the females were found to belong to one morphospecies, differing from the females of *C. insulanum* sensu Deeleman-Reinhold [2001] to the extent that they belonged to a different species group. No female specimen resembling *C. insulanum* was found and thus it was initially assumed that the female syntypes of *C. adjacens* were missing. After studying the available literature, and further specimens from India identified as *C. insulanum* we recognised that the male and females of *C. adjacens* were mismatched, and that from the description the males thought to be *C. adjacens* are actually conspecific with the female of *C. approximatum*. It then appeared that *C. approximatum* was the species conspecific with *C. insulanum* (sensu Deeleman-Reinhold [2001]) but a study of the syntypes of *C. insulanum* reveals that Deeleman-Reinhold [2001] and subsequent authors dealt with misidentified specimens.

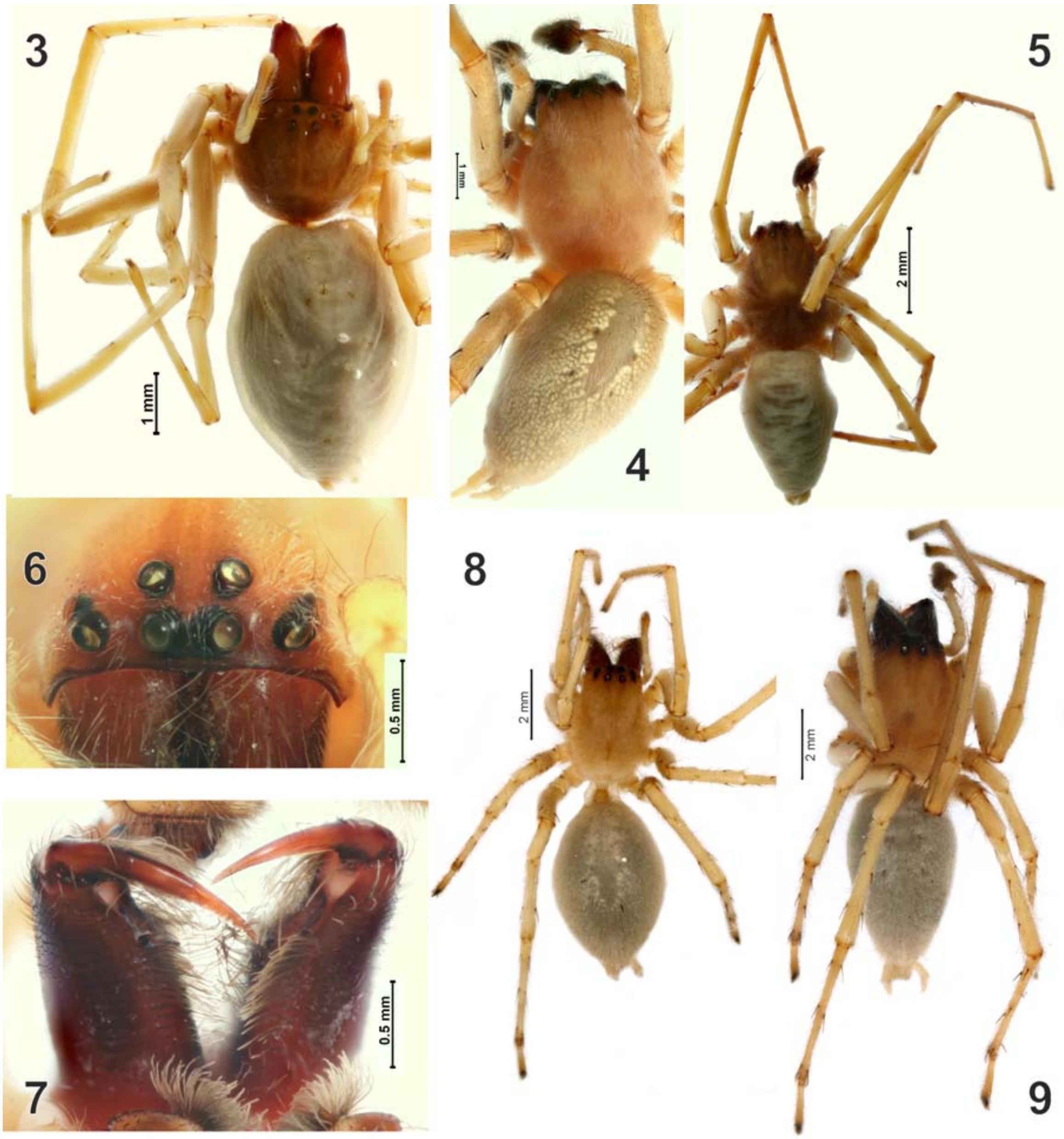
Material and methods

Specimens were photographed with a Canon EOS 7D camera attached to an Olympus SZX16 stereomicroscope and Pro-Microscan camera attached to the Olympus BH-2. Digital images were montaged using CombineZP and Helicon focus 3.10 image stacking software. Epigynes were cleared in a KOH/water solution until soft tissues were dissolved. Standard abbreviations are used for leg segments: Fe femur, Pa patella, Ti tibia, Mt metatarsus, Ta tarsus. Variations in number of spines are given in brackets. The measurements are in mm.

Acronyms for museums: MCSN — Museo Civico di Storia Naturale "Giacomo Doria", Genova, Italy; OUMNH — Oxford University Museum of Natural History; SMF — Senckenberg Museum, Frankfurt am Main, Germany; ZMMU — Zoological Museum of the Moscow State University, Moscow, Russia.

Taxonomic survey

NOTE. When we found that syntypes of *C. adjacens* are mismatched and males are conspecific with syntype females of *C. approximatum* we had two options: either to select a male of *C. adjacens* as lectotype and synonymize the two



Figs 3–9. *Cheiracanthium adjacens* (3, lectotype) and *C. approximatum* (4–9). 3, 8 — female habitus, dorsal; 4–5, 9 — male habitus; 6 — prosoma, frontal; 7 — chelicera, ventro-posterior. 5 — syntype of *C. adjacens*; 4, 6–7 — specimen from Himachal Pradesh; 8–9 — specimens from Punjab.

Рис. 3–9. *Cheiracanthium adjacens* (3, лектотип) и *C. approximatum* (4–9). 3, 8 — габитус самки, сверху; 4–5, 9 — габитус самца; 6 — просома, спереди; 7 — хелицера, снизу-сзади. 5 — синтип *C. adjacens*; 4, 6–7 — экземпляр из Химачал Прадеш; 8–9 — экземпляр из Пенджаба.

species (then the females of *C. adjacens* will not have any name) or to consider one of the two syntypes females of *C. adjacens* as the lectotype, in which case both species names remain valid.

Cheiracanthium approximatum O. Pickard-Cambridge, 1885 Figs 1, 2 ‘a–c, e’, 4–17, 25–31.

Chiracanthium approximatum O. Pickard-Cambridge, 1885: 26, pl. 2, f. 18 (♀).

Chiracanthium adjacens O. Pickard-Cambridge, 1885: 24, pl. 2, f. 17 (♂ only).

Chiracanthium adjacensoides Song, Chen et Hou, 1990: 427, f. 1–4 (♂♀), **syn.n.**

Chiracanthium paradjacens Chen et Gao, 1990: 148, f. 186a–d (♂♀), syn.n.

Cheiracanthium payateus Barrion et Litsinger, 1995: 156, f. 87a–h (♂), **syn.n.**

Cheiracanthium tigbauaensis Barrion et Litsinger, 1995: 161, f. 91a–f, 92a–d (♂♀), **syn.n.**

Cheiracanthium tingilium Barrion et Litsinger, 1995: 164, f. 93a–e (♀), **syn.n.**



Figs 10–15. Male palp of *Cheiracanthium approximatum*: 10–12 — paralectotype of *C. adjacens*, 13–15 — specimen from Punjab. 10, 13 — ventral; 11, 14 — retrolateral; 12, 15 — dorsal. Scale = 0.2 mm.

Рис. 10–15. Пальпа самца *Cheiracanthium approximatum*: 10–12 — паралектотип *C. adjacens*, 13–15 — экземпляр из Пенджаба. 10, 13 — снизу; 11, 14 — ретролатерально; 12, 15 — сверху. Масштаб 0,2 мм.

Cheiracanthium bikakapenalcolium Barrion et Litsinger, 1995: 165, f. 94a–e (♀), **syn.n.**

Cheiracanthium hugiscium Barrion et Litsinger, 1995: 167, f. 95a–e (♀), **syn.n.**

Cheiracanthium insulanum: Deeleman-Reinhold, 2001: 228, f. 272–279 (♂♀, misidentifiaction).

NOTE. All references to *C. insulanum* except for Thorell [1878] in WSC [2020] refer to this species.

TYPE: Holotype ♀ from "Murree to Sind Valley, July 14th to August 5th, 1873", should be in OUMNH, not found.

ADDITIONAL MATERIAL EXAMINED**:** PAKISTAN: paralectotypes of *C. adjacens*: 1 ♂ in vial with label "6, B[ottle] 378, v[ial] 20, 2sp[ecimens]"; 1 ♂ in with label "32". Text contains following label: "Murree, June 11th to July 14th, 1873". INDIA: 2 ♂♂ [ZMMU], ***Himachal Pradesh***, Patlikuhl Town, 32°07.4′N 77°08.8′E, 1200 m, 17–23.06.1999 (YU.M. Marusik); 1 ♂ 1 ♀ [SMF 61705], ***Punjab***, Chandigarh, bus terminal, 30°43.017′N 76° 44.678′E, 307 m, 12.03.2011 (P. Jäger).

DIAGNOSIS. This species is most similar to *C. furculatum* Karsch, 1879 known from the Afrotropical region, and recently found in Belgium, Germany and Poland [Nentwig *et al*., 2020]. Males of both species have sharply pointed tibial apophysis, strong retrolateral cymbial notch. Females have similar epigynes, with small receptacles, and a straight copulatory duct forming a small loop anteriorly. Males of *C. approximatum* differ from those of *C. furculatum* by having tibial apophysis shorter than tibia (*vs*. as long as tibia), embolus originating at 2 o'clock position (vs. 3 o'clock), and non-bilobate tegular apophysis (*vs*. bilobate). Females of the two species differ through having an epigyne with relatively larger receptacles in *C. approximatum,* and a closely spaced loop of copulatory ducts (spaced apart by less than the diameter of the receptacle *vs*. by more than one diameter of the receptacle).

DESCRIPTION. Male [paralectotypes of *C. adjacens*, large (small)]. Total length 6.80 (6.30). Carapace 3.00 (3.13) long, 2.18 (2.25) wide. Abdomen 3.88 (3.55) long, 2.25 (2.30) wide. Carapace brown with radial stripes, fovea indistinct. Labium, maxillae and sternum brown. Chelicerae not modified, dark brown, with 2 promarginal and 3 retromarginal teeth. Abdomen yellowish in types. Freshly collected specimen yellowish with numerous guanine spots, absent only in cordial mark.

Leg segment lengths in the larger specimen:

	Fe	Pa	Ti	Mt	Ta	Total
I	4.95	1.45	5.25	5.7	2	19.35
II	3.7	1.3	3.6	3.95	1.25	13.8
III	2.55	1	2.3	3	0.9	9.75
IV	3.5	1.25	3.25	4.65	1.15	13.8

Spination of legs in the larger specimen:

	Fe	Ti	Mt
I	2p 2r	4-4v	1-1v
II	2p 2r	2-2v	1-1v
III	2p 2r	2p 1 r0-1v	2p 3r 0-2v
IV	2p 2r	2p 2r 1-1v	2p 2r 2-2v

Male palp as in Figs 2'c', 10–16, 25–31; tibia 3.3 longer than wide, with 2 apophyses retro- (*Ra*) and prolateral (*Pa*); retrolateral apophysis long, sharply pointed and twisted around the axis, like a bongo antelope horn, 2 times shorter than tibia; prolateral apophysis shorter than tibia width, rounded on tip; bases of apophyses separated by weakly sclerotized ridge (*Tr*); cymbium asymmetric, 2 times longer than wide, with almost straight sword like apophysis, 1/2 of cymbium length; cymbium with protruding retrolateral part (1/2 of cymbial length) and grove (*Cg*); tegular (=median) apophysis (*Ta*) complex, flat, with two lobes; embolus long, base of embolus (*Be*) located at about 2 o'clock position.

Female. See Deeleman-Reinhold [2001]. Epigyne as in Fig. 17; fovea not rebordered anteriorly or posteriorly, but only laterally; receptacles relatively small, located posteriorly, spaced by about 2 diameters; copulatory duct with 1 loop, part of copulatory duct adjoining to receptacles parallel to each other.

COMMENTS. We studied males of *C. approximatum* from three localities, syntypes *of C. adjacens* collected between Murree and Sind Valley, specimens from Himachal Pradesh (coll. Marusik 1999) and Punjab (coll. Jäger 2011). The paralectotypes of *C. adjacens* and specimens collected from Himachal Pradesh have no differences, but the male from Punjab has abrupt tibial apophysis (Figs 13–15), as opposed to the sharply pointed tibial apophysis of the others (this is an unusual character for *Cheiracanthium*). In addition, specimens from Punjab have a differently shaped cymbium (cf. Figs 10 and 13) and a small difference in the proportions of the bulb (length width ratio 1.5 *vs*. 1.4). The illustration of the male palp of a Taiwanese specimen (fig 5B in Chen & Huang [2012]) depicts a sharply pointed tibial apophysis but the cymbium has a weak notch in comparison to those in the syntypes or specimens from Himachal Pradesh. These differences may indicate that the Punjabi specimens, as well as these from Taiwan and other published localities may represent a separate species, and some of species names considered as synonyms could potentially be valid. Further studies of a greater range of material and particularly large series of specimens from one locality would be required to establish this.

Figures of the female (Figs 8, 17) may refer to closely related species, indistinguishable by epigyne.

Among the material studied we have not found any specimens matching the description for *C. approximatum*. This species was described from females only (number not specified) from the Muree to Sind Valley. This locality can be either in Pakistan or India (see Map 1). This species is not known from "China (Yarkand)" as currently indicated in the WSC [2020].

DISTRIBUTION. It seems that species is distributed from Northeastern Pakistan (type locality) to Phillipines.

Cheiracanthium adjacens O. Pickard-Cambridge, 1885 Figs 2'd', 3, 18–20.

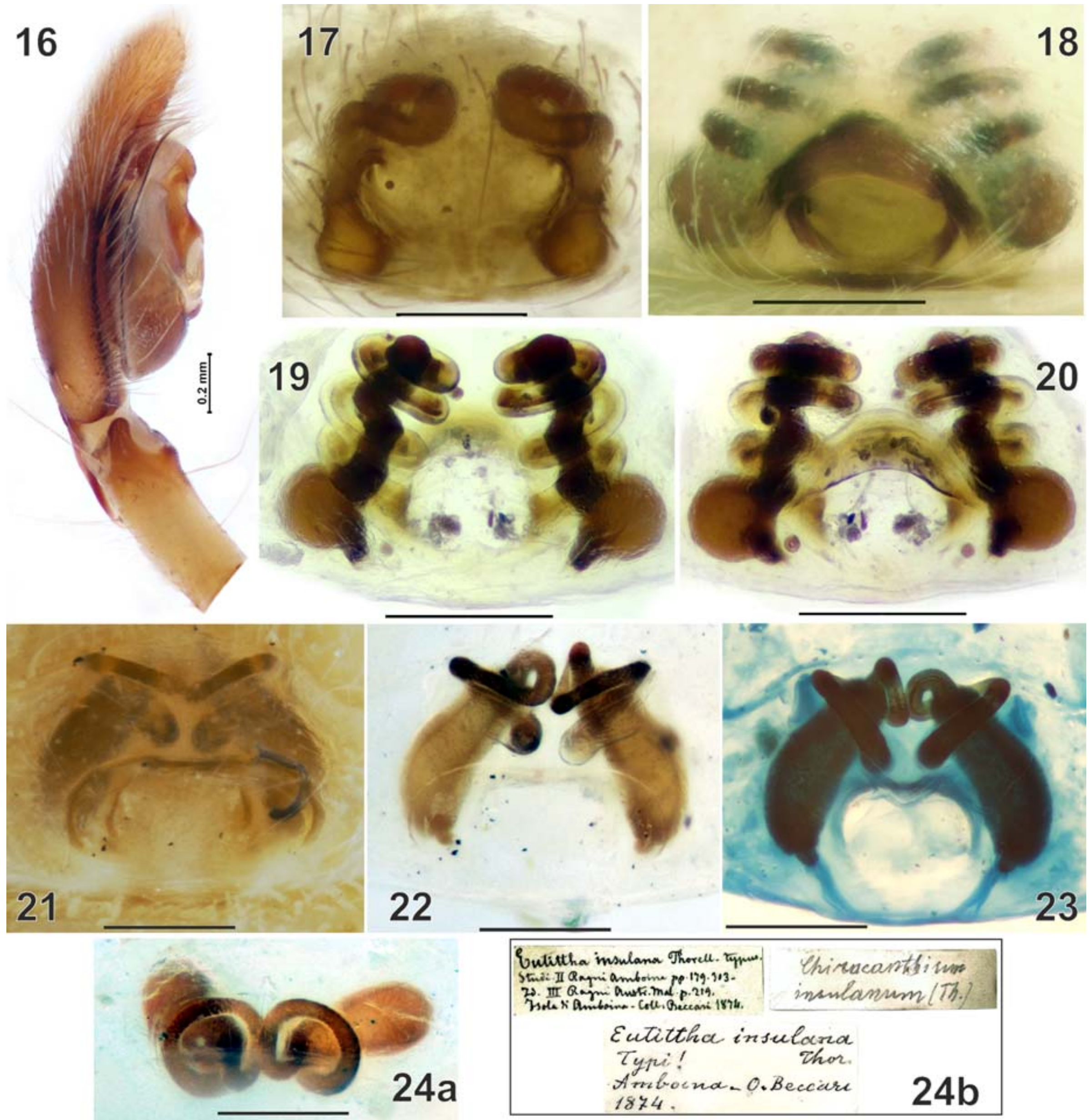
Chiracanthium adjacens O. Pickard-Cambridge, 1885: 24, pl. 2, f. 17 (♀, ♂ mismatched).

Chiracanthium adiacens: Caporiacco, 1935: 219 (may refer to *C. approximatum*).

TYPES: Lectotype ♀ (designated here) and paralectotype ♂ in vial with label "6, B[ottle] 378, v[ial] 20, 2sp[ecimens]". Paralectotypes: 1 ♀ with label "23" and 1 ♂ with label "32". Text contains following label: "Murree, June 11th to July 14th, 1873". All from OUMNH.

NOTE. Syntypes males and females are mismatched. We decided to select a female as lectotype to keep both species names of *Cheiracanthium* described by O. Pickard-Cambridge from the region, *C. approximatum* and *C. adjacens*, as valid.

DIAGNOSIS. Epigyne of *C. adjacens* is similar to that of *C. campestre* Lohmander, 1944 known from Europe. It has numerous coils of copulatory ducts visible through integument and rebordered epigyne, but differs in the number of coils (3 *vs*. 4) and has smaller receptacles (spaced by about 2 diameters, *vs*. 1 diameter). It is also similar to *C. falcatum* Chen, Huang, Chen et Wang, 2006 known from



Figs 16–24. Copulatory organs of *Cheiracanthium approximatum* (16–17), *C. adjacens* (18–20, lectotype), *C. insulanum* (21–24, lectotype). 16 — male palp, prolateral; 17 — epigyne, ventral; 18, 21 — intact epigyne, ventral; 19, 23 — macerated epigyne, dorsal; 20, 22 — macerated epigyne, ventral; 24a — macerated epigyne, anterior; 24b — labels accompanying syntypes of *C. insulanum*. 16 — paralectotype of *C. adjacens*; 17 — specimen from Punjab.

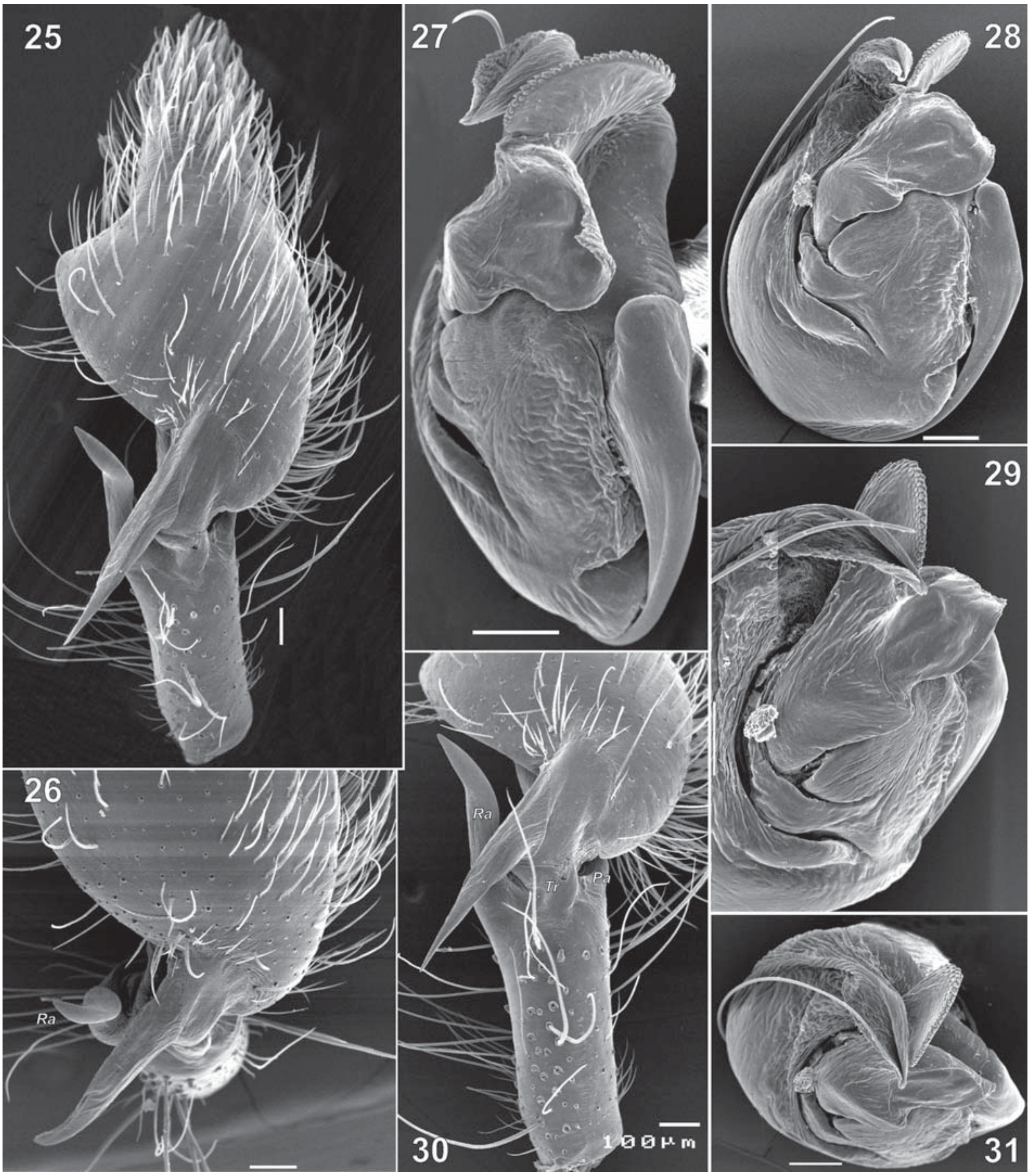
Рис. 16–24. Копулятивные органы *Cheiracanthium approximatum* (16–17), *C. adjacens* (18–20, лектотип), *C. insulanum* (21–24, лектотип). 16 — пальпа самца, пролатерально; 17 — эпигина, снизу; 18, 21 — интактная эпигина, снизу; 19, 23 — мацерированная эпигина, сверху; 20, 22 — мацерированная эпигина, снизу; 24a — мацерированная эпигина, спереди; 24b — этикетки из пробирки с синтипами *C. insulanum*. 16 — паралектотип *C. adjacens*; 17 — экземпляр из Пенджаба.

Taiwan, but differs by being of smaller size (carapace 2.53–2.95 long, *vs*. 3.1–4.4), having narrower (less transverse) fovea, smaller receptacles (spaced more than 2 diameters apart *vs*. less than 2 diameters) and less inclined loops of copulatory ducts (cf. Figs 18–20 and figs 3D–E in Chen & Huang [2012]).

Female (paralectotype). Total length 5.50–7.10. Carapace 2.53–2.95 long, 1.95–2.20 wide. Abdomen 4.13–4.25 long, 2.25–3.05 wide. Colouration and chelicera as in males.

Leg segment lengths in lectotype:

	Fe	Pa	Ti	Mt	Ta	Total
I	3.25	1	3.1	3.25	1.3	11.9
II	2.25	1	2.1	2.25	0.75	8.35
III	1.9	0.75	1.55	1.8	0.75	6.75
IV	2.75	1	2.5	2.9	0.85	10.0



Figs 25–31. Male palp of *Cheiracanthium approximatum* from Himachal Pradesh. 25 — tibia and cymbium, dorsal; 26, 30 — cymbium and tibia, anterio-dorsal and dorsal; 27–29 — bulb, retrolateral, ventral and ventro-prolateral; 31 — bulb, anterior. Scale = 0.1 mm.

Рис. 25–31. Пальпа самца *Cheiracanthium approximatum* из Химачал Прадеш. 25 — голень и цимбиум, сверху; 26, 30 — цимбиум и голень, спереди-сверху и сверху; 27–29 — бульбус, ретролатерально, снизу, и снизу-пролатерально; 31 — бульбус, спереди. Масштаб 0,1 мм.

Spination of legs in the lectotype:

	Fe	Ti	Mt
I	2p	1-1v	1-1v
II	1p	–	1p 1-1(2)v
III	1(0)p 1(0)r	1p1r	1p 1r 2-1v
IV	1r	1r	2p 2r 2-2v

Epigyne as in Fig 18–20, with large fovea, wider than high, receptacles globular, copulatory duct form 3 coils easily visible through integument; receptacles spaced by a distance greater than that of twice the diameter of the receptacle.

DISTRIBUTION. WSC [2020] indicates distribution of this species as Yarkand and Karakoram, although it was

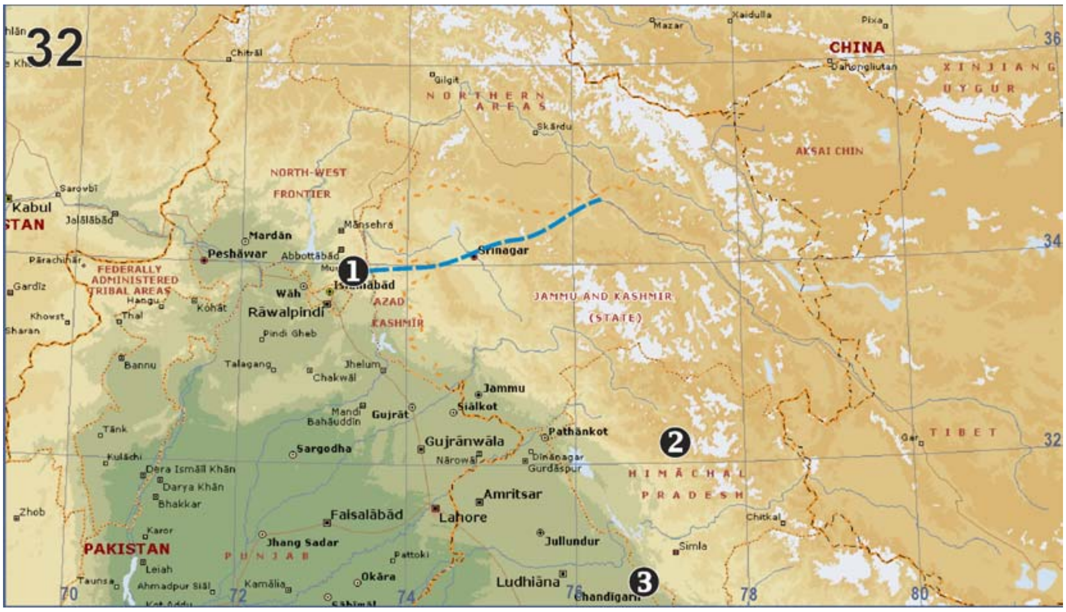


Fig. 32. Type localities of *Cheiracanthium approximatum* (broken blue line) and *C. adjacens* (1) and recent records of *C. approximatum* in India (2 — localities in Himachal Pradesh; 3 — Chandigarh).

Рис. 32. Типовые местообитания *Cheiracanthium approximatum* (голубая пунктирная линия) и *C. adjacens* (1), а также современные находки *C. approximatum* в Индии (2 — находки в Химачал Прадеш; 3 — Чандигарх).

described from Murree (currently northern Punjab Province of Pakistan). Caporiacco [1935] reported *C. adjacens* in several localities of "Karakoram" currently belonging to Gilgit-Baltistan administrative unit of Pakistan (Fig. 32). Most likely these records refer to *C. approximatum*. Accounting for the new synonymy this species is known from Pakistan to Philippines, and south to Ambon Island, and reported from Pakistan, India, China, Laos, Taiwan, Indonesia and Philippines.

Cheiracanthium insulanum (Thorell, 1878)
Figs 21–24.

Eutittha insulana Thorell, 1878: 179 (♀); 1881: 219, 695 (just indication about occurrence in Ambon).

Chiracanthium insulanum: Simon 1897: 79 (synonymized *Eutittha* Thorell, 1878, with type species *E. insulana* and *Cheiracanthium*).

NOTE. All other records of this species and all synonyms listed in WSC [2020] refer to *C. approximatum* or its sibling species.

TYPES: Lectotype ♀ (designated here) and 4 juvenile paralectotypes (MCSN), in vial with 3 labels (Fig. 24b): "*Eutittha insulana* Thor. Typi! Amboina, O. Beccari, 1874" "*Eutittha insulana* Thorell, Typus Studi II Ragni Amboina, pp. 179, 303-370 III Ragni Austr. Mal p.219 Isola si Amboina. Coll. Veccari 1874" and *Chiracanthium insulanum* (Th.). The latter label could be written by E. Simon, who studied the type (Simon 1897: 79).

COMMENTS. Deeleman-Reinhold [2001: 228] states that the specimen studied was labelled as: "Indonesia, Moluccas: 1 ♀ (type ?), 1 juvenile, Ambon (MCSNG)". These are not the specimens that should be considered the types (marked as 'Typi'), but misidentified specimens collected at a later date.

We have not provided a description of the lectotype as it out of scope for our paper, but we have provided comparative figures of the epigyne. We did not find figures of any similar species in the literature.

DISTRIBUTION. So far this species is known from the type locality.

Discussion

According to the WSC [2020], to date 25 species of *Cheiracanthium* are known from mainland India and Bangladesh. The genus was surveyed in two publications; Gravely [1931] and Majumder & Tikader [1991]. None of species are mentioned as occurring in the territory of Pakistan. In the most recent review of Indian fauna Majumder & Tikader [1991] listed 24 of these species, including *Cheiracanthium adjacens* and *C. approximatum* as occurring in "Yarkand, N. W. Himalayas, India", a geographical inaccuracy given that Yarkand lies within China, and in the mountain region called Tibet, not Himalaya. The WSC [2020] catalog attributes *C. approximatum* to Yarkand (China) only.

We tried to check if any of the Indian species could be a junior synonym of *C. adjacens* or *C. approximatum* and recognized that it is impossible to make any conclusions based on figures in Majumder & Tikader [1991] or a later publication by Biswas & Raychaudhuri [2003]. Figures and descriptions are too schematic, and have been over-simplified to such a degree that in most cases it is not clear which family the species considered to be in *Cheiracanthium* are thought to belong. In addition, the types of species described by Tikader are unavailable for research, including those in collaboration with Majumder in 1991.

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References

Biswas V., Raychaudhuri D. 2003. Sac-spiders of Bangladesh: genus *Cheiracanthium* Koch (Araneae: Clubionidae) // Records of the Zoological Survey of India. Vol.101. No.3–4. P.115–124.

Barrion A.T., Litsinger J.A. 1995. Riceland spiders of South and Southeast Asia. Wallingford, UK: CAB International. xix + 700 pp.

Caporiacco L. di. 1935. Aracnidi dell'Himalaia e del Karakoram, raccolti dalla Missione italiana al Karakoram (1929-VII) // Memorie della Società Entomologica Italiana, Genova. Vol.13. P.161–263.

Chen S.H., Huang W.J. 2012. Miturgidae (Arachnida: Araneae) // Chen S.H., Huang W.J. (eds.). The spider fauna of Taiwan. Araneae. Miturgidae, Anyphaenidae, Clubionidae. Taipei: National Taiwan Normal University. P.5–30, 101–102, 114–125.

Chen X.E., Gao J.C. 1990. The Sichuan farmland spiders in China. Chengdu: Sichuan Science and Technology Publishing House. 226 pp. [In Chinese]

Deeleman-Reinhold C.L. 2001. Forest spiders of South East Asia: with a revision of the sac and ground spiders (Araneae: Clubionidae, Corinnidae, Liocranidae, Gnaphosidae, Prodidomidae and Trochanterriidae). Leiden: Brill. 591 pp.

Gravely F.H. 1931. Some Indian spiders of the families Ctenidae, Sparassidae, Selenopidae and Clubionidae // Records of the Indian Museum, Calcutta. Vol.33. P.211–282.

Majumder S.C., Tikader, B.K. 1991. Studies on some spiders of the family Clubionidae from India // Records of the Zoological Survey of India, Occasional Paper. Vol.102. P.1–175.

Marusik Yu.M., Nadolny A.A. 2018. Redescription of enigmatic spider genus *Stoliczka* O. Pickard-Cambridge, 1885 (Aranei: Lycosoidea) based on the type species. Zootaxa. Vol.4497. No.2. P.295–300. https://doi.org/10.11646/zootaxa.4497.2.9

Marusik Yu.M., Omelko M.M. 2018. A survey of the *Porrhoclubiona* Lohmander, 1944 (Aranaea: Clubiondae) from Central Asia // ZooKeys. Vol.802. P.19–38. https://doi.org/10.3897/zookeys.802.30236

Marusik Yu.M., Zonstein S. 2019. Redescription of Central Asian *Filistata seclusa* (Araneae: Filistatidae) with establishing a new combination // Arachnologishche Mitteilungen. Vol.57. No.1. P.43–47. https://doi.org/10.30963/aramit5708

Nentwig W., Blick T., Bosmans R., Gloor D., Hänggi A., Kropf C. 2020. Araneae. Spiders of Europe. Version 02.2020. Available from: https://www.araneae.nmbe.ch (accessed 19 February 2020)

Pickard-Cambridge O. 1885. Scientific results of the second Yarkand mission; based upon the collections and notes of the late Ferdinand Stoliczka, Ph. D. Araneidea. Calcutta Government of India. 115 pp.

Simon E. 1897. Histoire naturelle des araignées. Deuxième édition. T.2. Paris Roret. P.1–192.

Song D.X., Chen X.E., Hou J.W. 1990. A new species of the genus *Chiracanthium* from China (Araneae: Clubionidae) // Acta Zootaxonomica Sinica. Vol.15. P.427–430.

Thorell T. 1878. Studi sui ragni Malesi e Papuani. II. Ragni di Amboina raccolti Prof. O. Beccari // Annali del Museo Civico di Storia Naturale di Genova. Vol.13. P.1–317.

Thorell T. 1881. Studi sui Ragni Malesi e Papuani. III. Ragni dell'Austro Malesia e del Capo York, conservati nel Museo civico di storia naturale di Genova // Annali del Museo Civico di Storia Naturale di Genova. Vol.17. P.1–727.

World Spider Catalog. 2020. World Spider Catalog. Natural History Museum Bern, Bern. Available from: http://wsc.nmbe.ch (accessed 19 February 2020).

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